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Patent Claims:

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1. A built-up camshaft comprising a pipe coated by a jointing coating on an outer cylindrical surface and an inner cylindrical surface and having an outer pipe diameter and an inner pipe diameter and having cam places, bearing ring places and pipe end places; cams formed as rings with an outer cylindrical flange and an inner cylindrical flange and provided with the jointing coating on an inner cylindrical surface of the inner cylindrical flange and positioned at the cam places and bearing rings provided with the jointing coating on inner surfaces being in contact with the pipe and positioned at the bearing ring places and end pieces provided with the jointing coating on outer cylindrical surfaces and having an outer end pieces diameter bigger than the inner pipe diameter, wherein the jointing coating of the pipe and the jointing coating of the cams, the bearing rings and the end pieces create durable joints between the pipe and the cams, the bearing rings and the end pieces and wherein the surface coating prevents a tribocorrosion and increases load capacity as compared to conventional compression joints.

2. The built-up camshaft according to claim 1, wherein the jointing coating is a joint-stable conversion coating.

3. The built-up camshaft according to claim 1, wherein the jointing coating is a cement coating.

4. The built-up camshaft according to claim 1, wherein at least one of the pipe, the cams, the end pieces, the bearing rings are made out of one of the group of metal, ceramics, plastics by one of cutting, non-cutting, milling, forging in at least one of massive and profiled form.

5. The built-up camshaft according to claim 1, wherein the outer cylindrical surface and the inner cylindrical surface of the pipe is at least partially mechanically machined.

6. A built-up camshaft comprising  
a pipe coated with a crystalline phosphate coating on an outer cylindrical surface and on an inner cylindrical surface and having an outer pipe diameter and an inner pipe diameter;  
cams and bearing rings and end pieces having an outer

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diameter bigger than the inner pipe diameter and connected by means of compression joints to the pipe and provided with the crystalline phosphate coating on surfaces being in contact with the pipe, wherein the crystalline phosphate coating prevents a tribocorrosion and increases load capacity as compared to compression joints and creates stable joints between the pipe and the cams, the bearing rings and the end pieces.

7. A built-up camshaft comprising a pipe coated by a cement on an outer cylindrical surface and an inner cylindrical surface and having an outer pipe diameter and an inner pipe diameter; cams and bearing rings and end pieces having an outer diameter bigger than the inner pipe diameter and connected by means of compression joints to the pipe and provided with the cement on surfaces being in contact with the pipe, wherein the cement prevents a tribocorrosion and increases load capacity as compared to compression joints.

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8. A method for building a camshaft comprising making a pipe having an outer pipe diameter and an inner pipe diameter;

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coating the pipe with a jointing coating on an outer cylindrical surface and on an inner cylindrical surface;  
making cams in form of rings with an outer cylindrical flange and an inner cylindrical flange and having a cam opening diameter smaller than the outer pipe diameter;  
coating cams with the jointing coating on surfaces to be placed in contact with the pipe;  
making bearing rings having an inner bearing ring diameter smaller than the outer pipe diameter;  
coating the bearing rings with the jointing coating on surfaces to be placed in contact with the pipe;  
making end pieces having an outer end piece diameter smaller than the inner pipe diameter;  
coating the end pieces with the jointing coating on surfaces to be placed in contact with the pipe;  
connecting the cams, the bearing rings, and the end pieces by means of compression joints to the pipe;  
and allowing the jointing coating to create stable joints between the pipe and the cams, the bearing rings and the end pieces by hardening the jointing coating.